Geotechnics
Incorporated

February 13, 2009

San Diego
El Centro
Riverside

Mr. James A. Sanders
P.O. Box 232
Brawley, California 92227

Project No. 1383-001-00
Document No. 09-0060

SUBJECT: REPORT OF GEOLOGIC RECONNAISSANCE
Pine Valley TPM 20765 RPL-2
Old Highway 80
Pine Valley, California
APN 410-010-07 and 410-030-20

Dear Mr. Sanders:

In accordance with your request, we have completed a geologic reconnaissance of the 32-acre site located on Old Highway 80, northwest of Pine Valley, California (Figure 1, Site Location Map). The purpose of our reconnaissance was to characterize the general geologic conditions at the site with regard to geologic hazards, which could affect the proposed site development. The results and conclusions provided in this letter are intended to aid in project planning, and should be considered subject to modification based on a more detailed geotechnical investigation of the site that includes subsurface exploration.

SCOPE OF SERVICES

We have prepared this report for the purpose of satisfying the requirement for a geologic reconnaissance of the site issued by the County of San Diego, Department of Planning and Land Use in their Tentative Map Review letter (County of San Diego, 2008). The scope of services for this report did not include subsurface explorations or laboratory testing. The scope of work for our geologic reconnaissance included the following items:

- Review of available published geologic maps and literature relevant to the project area including aerial photographs.
- Reconnaissance of the site on Monday January 26, 2009 to evaluate geologic conditions apparent from surface features, including landslide and rockfall potential.
- Preparation of this report summarizing our observations and conclusions with respect to the geologic conditions at the site.

SITE DESCRIPTION

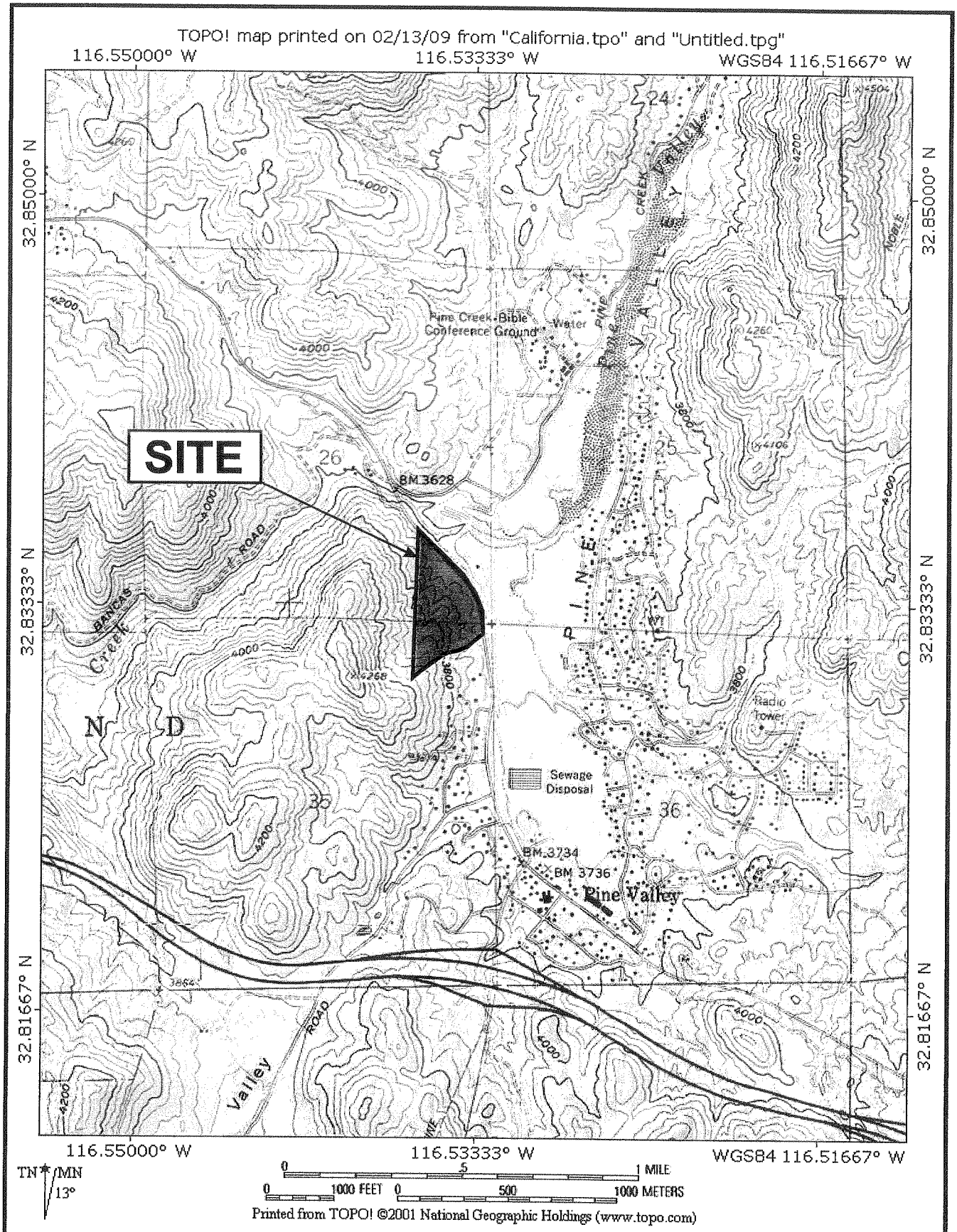
The site is located near the eastern base of a prominent north-south trending ridge next to Pine Valley. Old Highway 80 forms the easterly property boundary. The south, west and northern boundaries are undeveloped land. Most of the site is currently undeveloped and covered with thick chaparral and trees on gently to steeply north and eastward sloping terrain. In general, the southeastern ¼ of the site slopes gently (4 horizontal:1 vertical to 6 horizontal:1 vertical) whereas the remainder of the site slopes steeply (2:1 to 1:1). Both areas are dissected by north to northeastward flowing drainages. Crystalline rock outcrops are quite numerous throughout the site. Elevations at the site range from 3,910 feet above mean sea level (MSL) on a slope in the southwest corner of the site to 3,640 feet MSL near Old Highway 80 in the northern corner of the property. Access to the property is provided by a rough graded dirt road from Old Highway 80. Other improvements at the site include a water well and pump. The topography is shown on the Site Location Map, Figure 1.

PROPOSED DEVELOPMENT

Based on plans by Snipes-Dye Associates, (2008), the property will be subdivided into 3 open space parcels and a parcel with 4 residential lots and access drives. The development is planned for the gently sloping, southeast corner of the property. Grading of cuts up to 30 feet high and fills up to 20 feet high are proposed to create level pads and paved streets and driveways. An existing well will provide water, 10,000 gallon tanks will be constructed on each pad to store water. Sewage will be disposed on site in septic tanks and leach fields. The proposed development is shown on the Geologic Map (Figure 2).The suitability of the site for on-site sewage disposal and potable use of groundwater were not part of our reconnaissance.

SITE GEOLOGY

The site is located within the Peninsular Ranges Geomorphic Province of California. This province, which stretches from the Los Angeles basin to the tip of Baja California, is characterized as a series of northwest trending mountain ranges separated by subparallel fault zones, and a coastal plain of subdued landforms. The mountain ranges are underlain primarily by Mesozoic metamorphic rocks



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SITE LOCATION MAP

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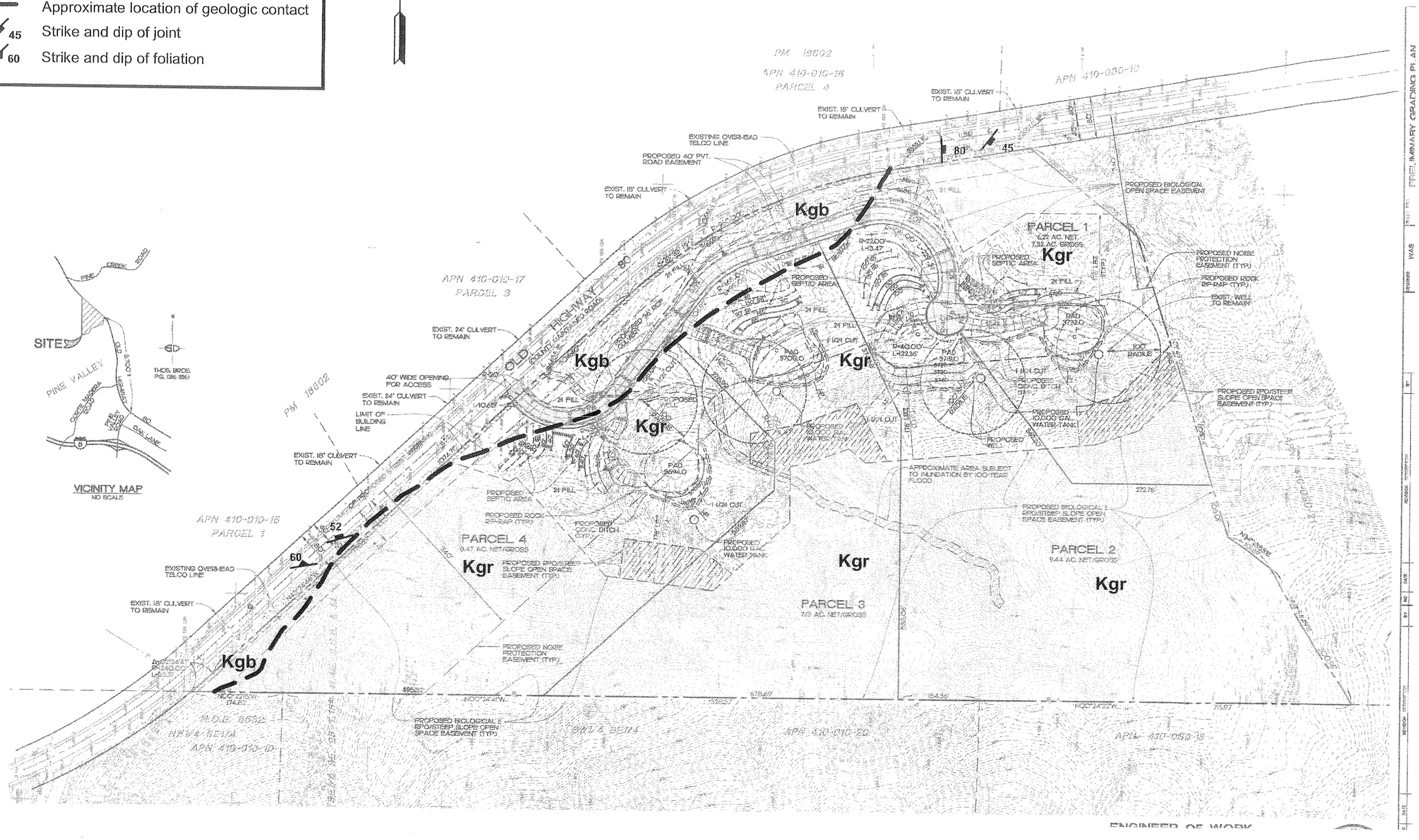
FIGURE 1

EXPLANATION

Kgr	Pine Valley Monzogranite
Kgb	Cuyamaca Gabbro
	Approximate location of geologic contact
45	Strike and dip of joint
60	Strike and dip of foliation

SCALE: 1" = 200'



Modified from: GP-1.pdf, provided by Snipes-Dye Associates. (2008)

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FIGURE 2

GEOLOGIC MAP

PRELIMINARY GRADING PLAN

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that were intruded by plutonic rocks of the southern California batholith, while the coastal plain is underlain by subsequently deposited marine and nonmarine sedimentary formations.

The site is located in the mountain ranges around Pine Valley, California. As observed during our reconnaissance, the site is underlain by two different types of crystalline batholithic rock covered by variable thicknesses of residual soil and colluvium. The geology is shown on the Geologic Map, Figure 2. Generalized descriptions of the geologic units observed at the site include:

Cuyamaca Gabbro (Map symbol $K_{gb)}$

Fine grained, biotite and hornblende rich gabbro was observed in road cuts along Old Highway 80 along the eastern edge of the site. Scattered outcrops of gabbro were also observed in the gentle slopes in the southeast corner of the property. The gabbro is dark gray in color, very hard and is locally foliated and jointed (Geologic Map, Figure 2). The gabbro weathers to a thin, clayey sand decomposed rock with a clayey sand residual soil. The gabbro does not create bold outcrops. Based on observations in road cuts, the gabbro was intruded by the younger Pine Valley Monzogranite (granite) that underlies the majority of the site. The differing rock types may be the reason for the more subdued topography in the southeast corner of the property.

Pine Valley Monzogranite (Map symbol K_{gr})

Granite underlies most of the property and the ridge overlooking the site to the west. The rock is coarse grained, massive but jointed and widely spaced. There are two prominent joint sets at the site; north-south and east-west, both dip steeply (Geologic Map, Figure 2). Outcrops of the rock are typically light brown to yellowish orange, and have slightly to moderately weathered faces. There are few large corestones at the higher elevations west of the property. On the property, the outcrops and relatively flat and rocks are well seated in the surrounding weathered material or soil. The rock appears to be associated with the early-Cretaceous Pine Valley Monzogranite described in the Preliminary Geologic Map of the El Cajon 30' x 60' Quadrangle (USGS, 2004). The weathered rock material classifies as fine to coarse grained silty sand (Unified Soil Classification: SM) and poorly graded sand with silt (SP-SM). The weathered rock is light brown to reddish brown in color, commonly iron

oxide stained, and exhibits relict rock structure. The rock ranges in hardness from soft to very hard depending on the degree of weathering.

Colluvium and Residual Soil

Colluvium is an accumulation of transported residual soil and weathered formational material found on slopes. Colluvium forms as a result of gravitational, down-slope creep or sheet wash on slopes. Residual soil develops in place and is exposed in the flatter topography. The colluvium and residual soil are similar in appearance and generally consist of fine to coarse grained silty sand (SM) that is light brown to brown in color. The thickness of the colluvium/residual soil was observed to be less than 2 feet in roadcuts at the site. Thicker deposits may exist in portions of the site not observed.

GEOLOGIC HAZARDS AND SITE CONSIDERATIONS

The site is not located within an area previously known for significant geologic hazards such as active faulting or landslides. Potential geologic hazards which may affect site development include:

Seismicity

Seismic hazards affecting the site primarily consist of ground shaking during seismic events on regional active faults. The nearest known active fault is within the Elsinore fault zone which is located about 12 miles northeast of the site. There are no known active faults in the area or projecting toward the site. The site is not located within an Alquist-Priolo Earthquake Fault Zone. In our opinion, the probability of surface rupture due to faulting is considered low. However, lurching and ground cracking as a result of a significant seismic event on a regional active fault is a possibility.

Liquefaction

The subject site is underlain by crystalline rock and relatively shallow residual or colluvial soil. There were no indications of shallow groundwater at the site. Thick soft sediments

with shallow groundwater are required to create liquefaction. These conditions are not present at the site. Liquefaction may occur in alluvial sediments within Pine Valley, located adjacent to the property east of Old Highway 80, however, the potential for liquefaction at the site is extremely low.

Slope Stability

Evidence of existing slope instabilities, landslides were evaluated by field observations and review of stereo aerial photographs (County of San Diego, 1968). Evidence of existing or past landslides, mudflows, or precariously balanced rocks susceptible to falling/rolling downslope were not observed during this site reconnaissance *directly upslope of, or within the planned building pad areas shown on the referenced improvement plans* (Geologic Map, Figure 2). Boulders/corestones observed by our field geologist that were in areas that could potentially affect the planned building pads appear to be buried to a significant degree and are not sitting on the ground surface. Most of the boulders observed at the site are irregularly shaped with their long axis emplaced perpendicular to the slope face. These observations as well as the subdued topography in the proposed development area indicate that the potential for rockfall and/or rolling boulders to impact the planned building pad areas is low. The few outcrops exhibiting core stones and steep topography were located west of the property. Should any of these boulders become loosened, they would be intercepted by drainages well before nearing the proposed development area on the subject site. Additional site investigation may be required if significant changes are made to the grading plans and/or the building pad areas are relocated.

The proposed development will not occur in or below areas susceptible to mud flow or slumps. Steep topography and thick, continuous accumulations of soil are not present directly upslope of the proposed development.

CONCLUSIONS

Based on the results of this reconnaissance, it is our opinion that it is feasible to develop the site as indicated on the referenced Tentative Map (Snipes-Dye, 2008) from a geologic standpoint. No

geologic conditions were encountered that would preclude the proposed construction, including evidence of existing landslides or rockfall potential, and, in our opinion, the building pads are safe for human occupancy in their present location with regards to the geologic hazards discussed in this report. However, some geotechnical considerations may exist, such as potentially compressible fill soils, cut/fill transition conditions in building pad areas, and excavations into hard granitic rock. Recommendations for mitigating these issues should be included in a geotechnical investigation report prepared after preliminary site development plans are completed.

LIMITATIONS OF INVESTIGATION

This reconnaissance was performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No warranty, expressed or implied, is made as to the conclusions and professional opinions included in this report.

Changes in the condition of a property can occur with the passage of time, whether due to natural processes or the work of man on this or adjacent properties. In addition, changes in applicable or appropriate standards of practice may occur from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

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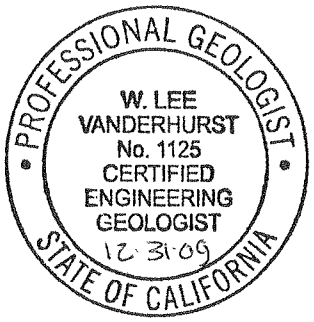

W. Lee Vanderhurst, C.E.G. 1125
Principal

Distribution: (2) Addressee, Mr. James A. Sanders
(2) Mr. Bill Snipes, Snipes-Dye Associates: 8348 Center Drive, Suite G, La Mesa, CA 91942-2910

REFERENCES

County of San Diego, Department of Planning and Land Use (2008). TPM 20765/ER 03-15-006; First Iteration Review of Initial Studies/Information, letter dated June 2.

County of San Diego Aerial Photographs, (1968), Flight AXN 4JJ, Frames 70 and 71.

Snipes-Dye associates (2008). Preliminary Grading Plan for TPM 20765 RPL-2, Log No. 03-15-006, 80 Scale.

United States Geological Survey (2004). Open-File Report 2004-1361, Preliminary Map of the El Cajon 30' x 60' Quadrangle, Southern California, Version 1.0, Compiled by Victoria R. Todd, Scale 1:100,000.

Account No. 5164-0671		Original Model Portfolio	Revised Model Portfolio	Estimated 241,424	Asset Class
Money market fund		2.0%	2.0%	4,828	Cash
SA Global Fixed	SAXIX	18.0%	25.0%	60,356	Bonds
Vanguard GNMA	VFIIX		23.0%	55,528	Bonds
SA US Market	SAMKX	20.0%			US Large Neutral
DFA US Large Co	DFLCX		10.0%	24,142	US Large Neutral
SA US Value	SABTX	15.0%			US Large Value
DFA US Large Value	DFLVX		10.0%	24,142	US Large Value
SA US Small Co	SAUMX	15.0%			US Small Stocks
DFA US Small Value	DFSVX		5.0%	12,071	US Small Stocks
DFA US Microcap	DFSCX		5.0%	12,071	US Small Stocks
SA Int'l Value	SAHMX	20.0%			Int'l Large Value
DFA Intl Value	DFIVX		10.0%	24,142	Int'l Large Value
SA Int'l Small Co	SAISX	10.0%			Int'l Small Co
DFA Intl Small Value	DISVX		5.0%	12,071	Int'l Small Co
DFA Emerging Markets Value	DFEVX		5.0%	12,071	Emerging Markets
		100.0%	100.0%	241,424	

Please utilize the above revised model for John & Laura Cole's Family Trust Account.

William L Vanderhurst Date